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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No.: 47

Application Number: 08/384,248
Filing Date: 02/06/95
Appellant(s): Alizon *et al.*

Kenneth J. Meyers
For Appellant

SUPPLEMENTAL EXAMINER'S ANSWER

Pursuant to the Remand under 37 C.F.R. § 1.193(b)(1) by the Board of Patent Appeals and Interferences on 17 December, 2001, a supplemental Examiner's Answer is set forth below.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 34-36 stand or fall together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

No prior art of record is relied upon by the examiner in the rejection of the claims under appeal.

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 34-36 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. *In re Rasmussen*, 650 F.2d 1212, 211 U.S.P.Q. 323 (C.C.P.A. 1981). *In re Wertheim*, 541 F.2d 257, 191 U.S.P.Q. 90 (C.C.P.A. 1976). The claimed invention is directed toward methods for the production of antibodies to HIV-1 antigens encoded by three λ-J19 restriction fragments (e.g., *Kpn*I (~6,100)/*Bgl*II (~9,150); *Kpn*I (~3,500)/*Bgl*II (~6,500); and, *Pst*I (~800)/*Kpn*I (3,500)). Presumably these restriction fragments correspond to the *gag*, *pol*, and *env* genes. The disclosure does **not** provide the nucleotide sequences of any of these restriction fragments, evidence that *bona fide* viral antigens were produced from said fragments, and evidence that antigen-specific antibodies were produced.

The written description requirement under Section 112, first paragraph, stipulates that the claimed subject matter must be

supported by an adequate written description that is sufficient to enable anyone skilled in the art to make and use the invention. The courts have decided that the specification must demonstrate that the inventor had possession of the claimed invention as of the filing date relied upon. Although the claimed subject matter need not be described identically, nonetheless, the disclosure relied upon must convey to those skilled in the art that applicants had invented the subject matter claimed. *Ralston Purina Company* v. *Far-Mar-Co., Inc.*, 227 U.S.P.Q. 177 (C.A.F.C. 1985). *In re Wilder, et al.*, 222 U.S.P.Q. 369 (C.A.F.C. 1984). *In re Wertheim, et al.*, 191 U.S.P.Q. 90 (C.C.P.A. 1976). *In re Blaser, Germscheid,* and *Worms*, 194 U.S.P.Q. 122 (C.C.P.A. 1977). *In re Driscoll*, 195 U.S.P.Q. 434 (C.C.P.A. 1977). *Utter* v. *Hiraga*, 6 U.S.P.Q.2d 1709 (C.A.F.C. 1988).

This rejection is not based upon enablement considerations. The Examiner does not dispute the scientific findings that the skilled artisan, at the time of filing, provided with a restriction fragment capable of encoding a **known** antigen, could express and purify the antigen of interest and employ this protein to generate antigen-specific antibodies. **This rejection is based upon the inability of the disclosure to reasonably convey to the skilled artisan that applicants were in possession of the claimed HIV-1 antigens and antibodies at the time of the filing date relied upon. The specification fails to provide any demonstrative evidence that applicants had generated expression vectors containing the claimed inserts, transfected suitable hosts, and produced suitable levels of recombinant HIV-1 proteins.** Moreover, **the disclosure fails to provide any evidence suggesting that these antigens were used to immunize animals and that HIV-1-specific antibodies were actually generated.**

The disclosure describes the preparation of a cDNA library from a LAV-infected immortalized B-lymphocyte cell line (see pp. 5 and 6). The cDNA library was screened and three recombinant clones (pLAV 13, pLAV 75, and pLAV 82) carrying LAV inserts identified (see p. 7). Having obtained short fragments of the LAV genome which should prove useful as probes, a second partial *Hind* III digested library was created from LAV-infected cells and screened for LAV proviral clones (p. 9). A series of positive clones were identified (lambda-J61, -J27, -J31, -J19) and their restriction maps ascertained (see pp. 2-4). Complete nucleotide sequences for these various clones were **not** provided. Considering the infidelity associated with the reverse transcription reaction in the preparation of cDNA libraries, and the quasispecies nature of retroviral infection which leads to many defective species, it is not readily manifest that any of these fragments encode proteins. The disclosure does **not** describe the insertion of these fragments into suitable expression vectors to see if they are capable of producing an immunogen. The disclosure does **not** describe the isolation and purification of a single LAV viral immunogen/antigen. The disclosure does **not** describe suitable immunization regimens that are capable of producing LAV-specific antibodies. Finally, the disclosure does *not* describe the isolation and purification of LAV-specific antibodies. While it is noted that page 13 of the disclosure briefly mentions that the identified DNA sequences can be used "for achieving the expression of LAV viral antigens for diagnostic purposes as well as for the production of a vaccine against LAV." Nevertheless, this vague recitation merely appears to be a wish to obtain reagents which were clearly never contemplated or in applicants' possession. Nothing in this passage would lead the skilled artisan to conclude that applicants' were in

possession of the claimed invention.

(11) Response to Argument

First, applicants assert that the Examiner agrees that the claimed restriction fragments encode for proteins and polypeptides. The Examiner does not concur with this assessment. As noted *supra*, the disclosure failed to provide any detailed nucleotide sequence data demonstrating that the cloned restriction fragments were in-frame and capable of coding a viral antigen/immunogen. The lentiviruses exist as a quasispecies and display considerable genotypic and phenotypic heterogeneity. Thus, in any given library, both replication-competent and replication-deficient forms will be present. Moreover, the reverse transcriptase employed in the preparation of cDNA libraries suffers from infidelity often introducing mutations into the strand or sequence being copied. Thus, simply identifying a restriction fragment from a novel virus does not prove conclusively that said fragment encodes a bonafide viral antigen/immunogen. The disclosure failed to perform a detailed molecular characterization of any of the fragments of interest. Thus, it simply is not know whether they encode full-length viral proteins, truncated forms thereof, unrelated proteins because of frame-shifting, or are entirely non-coding. The disclosure simply does not address this issue.

Second, contrary to applicants' assertion, the specification does not provide literal support for the proteins or polypeptides encoded by the restriction fragments of interest. The passages relied upon merely state that restriction fragments "can be cloned into expression vectors" and "the resultant proteins purified." As noted in the preceding paragraph, there is no indication that the restriction fragments are capable of coding for any given LAV

antigen or immunogen. The disclosure does **not** describe the detailed molecular characterization of these restriction fragments. Thus, it is simply **not known** if they correspond to bonafide LAV open reading frames. In fact, the applicants do **not** even know if suitable initiation codons are present in these sequences. The applicants do **not** know if these fragments are in the proper phase. Thus, it would be readily manifest to the skilled artisan that applicants never prepared suitable expression vectors, transfected suitable cell lines, and isolated and purified suitable viral antigens.

Third, applicants assert that the disclosure literally describes a "need" for LAV-specific antibodies. This argument clearly fails to support the appellants' position. Once again, a vague portion of the disclosure is relied upon that only discusses the possibility of using "antibodies" to identify the recombinantly produced antigens. This aspect of the argument does nothing to demonstrate that LAV-specific antigens/immunogens were prepared from the claimed restriction fragments. This point also fails to demonstrate that applicants isolated and prepared LAV-specific antibodies. The fact that the skilled artisan needs viral-specific immunological reagents to assess the immunoreactivity of any given antigen does not place the claimed invention in applicants' possession.

Fourth, contrary to applicants' arguments, the disclosure does not provide literal support for the use of the claimed proteins and polypeptides. Applicants again rely upon a generic statement in the disclosure that simply states that the restriction fragments of the invention can be used for "achieving the expression of LAV viral antigens for diagnostic purposes" particularly as it applies to the core and envelope regions. Contrary to applicants'

assertion, this passage does **not** describe the expression, isolation, and purification of a single LAV antigen from a single restriction fragment. This passage does **not** disclose a single diagnostic assay employing any given LAV antigen. There is no discussion of the specificity, reliability, or reproducibility of any given diagnostic assay employing LAV-specific antigens or antibodies. Once again, the skilled artisan would reasonably conclude that applicants were not in possession of the claimed invention at the time of filing.

Finally, applicants argue that the use of the proteins and polypeptides as "immunogens" clearly illustrates that "raising antibodies" was clearly embodied in the disclosure. This argument is not tenable either upon perusal of the teachings of the specification. Once again, the passages relied upon fail to describe the isolation and purification of a single LAV immunogen, the immunization of suitable animals, the isolation and purification of resultant antibodies, and the characterization and analysis of said antibodies. This portion of the disclosure clearly fails to support the claimed invention. Thus, the skilled artisan upon perusal of the disclosure would reasonably conclude that applicants were not in possession of the claimed invention at the time of filing.

For the above reasons, it is believed that the rejections should be sustained.

Correspondence

Correspondence related to this application may be submitted to Group 1600 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Official communications should be directed toward the following Group 1600 fax number: (703) 872-9306. Any inquiry concerning this communication should be directed to Jeffrey S. Parkin, Ph.D., whose telephone number is (703) 308-2227. The examiner can normally be reached Monday through Thursday from 8:30 AM to 6:00 PM. A message may be left on the examiner's voice mail service. If attempts to reach the examiner are unsuccessful, the examiner's supervisors, Laurie Scheiner or James Housel, can be reached at (703) 308-1122 or (703) 308-4027, respectively. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is (703) 308-0196.

Respectfully submitted,

Jeffrey S. Parkin, Ph.D.

James C. Housel
Supervisory Patent Examiner
Art Unit 1648

LONG V. LE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Conferee

06 January, 2004